



DELHI PUBLIC SCHOOL, CHANDIGARH

Mock Test, Session 2023-24

Class: X Subject: Science

Time: 3:00 hrs

MM: 80

General Instructions :

- This question paper consists of 39 questions in five sections
- All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
- Section A consists of 20 objective type questions carrying 1 mark each.
- Section B consists of 6 very short questions carrying 2 marks each.
- Section C consists of 7 short answer questions carrying 3 marks each.
- Section D consists of 3 Long answer questions carrying 5 marks each.
- Section E consists of 3 source-based/case-based units of assessment of 4 marks each with sub-parts

SECTION A

1. Silver chloride turns grey in sunlight because of its decomposition into:
a) silver oxide b) silver and chlorine c) chlorine d) silver
2. Which of the following acid is present in sour milk?
a) Tartaric acid b) Acetic acid c) Citric acid d) Lactic acid
3. Which one of the following properties is not generally exhibited by ionic compounds?
a) Solubility in water b) Electrical conductivity in solid state
c) High melting and boiling points d) Electrical conductivity in molten state.
4. Which of the following is an example of endothermic process?
a) Formation of slaked lime
b) Decomposition of vegetable matter into compost
 c) Dissolution of ammonium chloride in water
d) Digestion of food in our body
5. Which of the following element is a metalloid
a) Lead b) Tin c) Antimony d) Barium
6. Which of the following will undergo Addition reactions
a) CH_4 b) C_3H_8 c) C_2H_6 d) C_2H_4
7. A soap molecule has a
a) Hydrophobic head & hydrophobic tail
b) Hydrophobic head & hydrophilic tail
 c) Hydrophilic head & hydrophobic tail
d) Hydrophilic head & hydrophilic tail

8. The liquid which collects in the Bowman's capsule is
- a) concentrated urine
 - b) blood plasma minus blood proteins
 - c) glycogen and water
 - d) used bile for excretion
9. Leaf fall can be induced by
- a) Auxins
 - b) Cytokinins
 - c) Abscisic acid
 - d) Thyroxine
10. The ability of a cell to divide into several cells during reproduction in plasmodium is called
- a) budding
 - b) fragmentation
 - c) binary fission
 - d) multiple fission
11. The maleness of a child is determined by
- a) the X- chromosome in zygote
 - b) the Y- chromosome in zygote
 - c) the cytoplasm of germ cell
 - d) by environmental factors
12. Which of the following events in the mouth cavity will be affected if salivary amylase is lacking in the saliva?
- a) Starch breaking down into sugars.
 - b) Proteins breaking down into amino acids.
 - c) Absorption of vitamins.
 - d) Fats breaking down into fatty acids and glycerol.
13. An object is placed at a distance of 40cm in front of a concave mirror of focal length 20cm. The image produced is:
- a) Virtual and erect
 - b) Real and erect
 - c) Real, inverted and of the same size as that of the object
 - d) Real, inverted and the size of the image is smaller than the object.
14. Identify the phenomenon of light involved in the formation of a rainbow.
- a) reflection, refraction and dispersion
 - b) refraction, dispersion and total internal reflection
 - c) dispersion, scattering and total internal reflection
 - d) refraction, dispersion and internal reflection
15. The decomposers in an ecosystem
- a) convert inorganic material into simpler forms
 - b) convert organic material into inorganic forms
 - c) convert inorganic material into organic compounds
 - d) do not break down organic compounds
16. Kitchen wastes can be hygienically disposed of through
- a) Dumping
 - b) Composting
 - c) Incineration
 - d) Recycling

Q. no 17 to 20 are Assertion - Reasoning based questions.

These consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

(a) Both A and R are true and R is the correct explanation of A

(b) Both A and R are true and R is not the correct explanation of A

(c) A is true but R is false

(d) A is False but R is true

17. Assertion (A): In summer season, a milk man adds a very small amount of baking soda to fresh milk.

Reason (R): Sodium hydrogen carbonate present in baking soda neutralises lactic acid turned in the milk. (C)

18. Assertion (A): Pollen grains from the carpel stick to the stigma of stamen.

Reason (R): The fertilised egg cells grow inside the ovules and become embryo. (D)

19. Assertion (A): Longer wires have greater resistance and the smaller wires have lesser resistance. (B)

Reason (R): Resistance is inversely proportional to the length of the wire. (C)

20. Assertion (A): The waste we generate may be biodegradable or non-biodegradable.

Reason (R): The disposal of waste we generate is causing serious environmental problems. (C)

Section B

21. A metal 'M' forms an oxide having the formula M_2O_3 . It dissolves both in dilute sulphuric acid and dilute sodium hydroxide solution. Identify the metal and write equations for the reactions involved.

22. Regeneration is not possible in all types of organisms. Why?

23. a) A product is formed in our muscles due to the breakdown of glucose when there is lack of oxygen. Name the product and also mention the effect of build-up of this product.

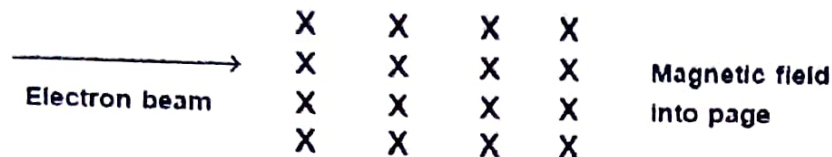
b) Differentiate between fermentation in yeast and aerobic respiration on the basis of end product formed.

OR

A veterinary surgeon removed a good length of small intestine of a bear suffering from intestinal tumour. What kind of diet, plant based or animal based, will be helpful in faster recovery of the bear. Give reason for your choice.

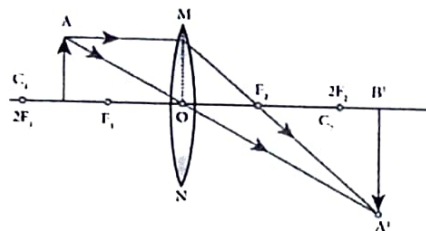
24. The diagram shows a beam of electrons about to enter a magnetic field. The direction of the field is into the page.

(a) What will be the direction of deflection, if any, as the beam passes through the field?



(b) State the rule you used to find the direction of deflection in the above case.

25. Study the diagram given below and answer the questions that follow:



- Is the type of lens used converging or diverging?
- List three characteristics of the image formed.

Or

A concave mirror has a focal length of 20 cm. At what distance from the mirror should a 4 cm tall object be placed so that it forms an image at a distance of 30 cm from the mirror? Also calculate the size of the image formed.

26. What is the full form of CFC? Why is the excessive use of CFC a cause of concern?

Section C

27. Write the balanced chemical equations for the following reactions and identify the type of reaction in each case.

- In thermit reaction, Iron (III) oxide reacts with aluminium and gives molten iron and aluminium oxide.
- Magnesium ribbon is burnt in an atmosphere of nitrogen gas to form solid magnesium nitride.
- Chlorine gas is passed in an aqueous potassium iodide solution to form potassium chloride solution and solid iodine.

28. An organic compound 'A' (molecular formula $C_2H_4O_2$) which is used as a preservative, reacts with another compound 'B' which is used widely as a solvent, in the presence of an

acid catalyst to form a compound 'C'. Compound 'B' on oxidation with alkaline KMnO_4 followed by acidification gives compound 'A'. Identify Compound 'A', 'B' and 'C'. Give one use of 'C'. Write the reaction involved for the formation of 'C'

OR

a) Name the acid and base from which the following salts have been formed:

i) Sodium sulphate ii) Potassium nitrate

b) Draw the electron dot structure of Propan-2-one

29. Give the location and function of the following glands.

a. Adrenal b. Pancreas c. Thyroid

30. "It is possible that a trait is inherited but not expressed." Give a suitable example to justify this statement.

31. List two causes leading to myopia of the eye. Draw ray diagram to show the image formation in the case of defected eye and corrected eye.

Or

(a) How will you use two identical prisms to get a white light emerging out of the second prism if white light is incident on the first prism?

(b) A monochromatic light (same colour) is made to fall on a glass slab and on a prism separately. What difference do you observe?

32. Draw the pattern of magnetic field lines of a current carrying solenoid. What does the pattern of field lines inside the solenoid indicates?

33. a) Resistance of a metal wire of length 5 m is 100Ω . If the area of cross section of the wire is $3 \times 10^{-7} \text{m}^2$, calculate the resistivity of the metal.

b) Why do we use copper and aluminium wires for transmission of electric current?

Section D

34. a) Write the chemical name and formula of bleaching powder. How is it prepared? (equation)

b) What are addition reactions? Give its industrial application.

c) Why scum is formed in Hard water?

OR

a) Write the chemical name & formula of Baking soda. How is it prepared? (equation)

b) Why carbon compounds are used as fuels?

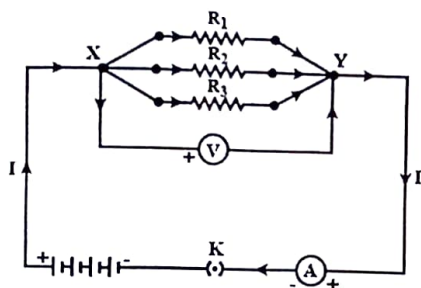
c) Give a chemical test to distinguish between Alcohols & Carboxylic Acids

d) Write the general formula of Alkynes.

- 35 a) Name the organ that produces sperms as well as secretes a hormone in human males. Name the hormone it secretes and give its function.
- b. What is the site of fertilisation in human female body?
- c. Describe the process of budding in hydra with the help of a neatly labelled diagram.

OR

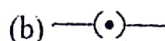
- a. Why is double circulation necessary in human beings?
- b. Name the blood vessel that brings oxygenated blood to the left auricle.
- c. How is this blood sent to all parts of the body?
36. In the circuit given below the resistors are R_1 , R_2 and R_3 have the values $10\ \Omega$, $20\ \Omega$ and $30\ \Omega$ respectively which have been connected to a battery of $12\ V$.



- Calculate:
- the total circuit resistance
 - the total current in the circuit and
 - the current through each resistor.

OR

- i) What do the following symbols represent in a circuit diagram?



- Name a device that helps to maintain a potential difference across a conductor.
- Define the unit of electric current.
- Power of a lamp is $60\ W$. Find the energy in joules consumed by it in $1\ s$.

Section E

37. Metals are found to occur in the nature either in the free state (native state) or in the combined state, i.e., in the form of their compounds.
- Least reactive metals like gold and platinum (at the bottom of the activity series) are found in free state.

- man males.
- i) Which mirror should Ravi need to fix as his rear-view mirror?
 - ii) Write the relationship between radius of curvature and focal length of a spherical mirror.
 - iii) What is the formula for magnification obtained with a mirror?
 - iv) Ravi did some preliminary experiment with mirror M1 and found that magnification of the real image of an object placed at 10 cm in front of it is 3, at what distance is the image located?

OR

What is the nature of the image formed, if the magnification of a mirror is positive?
